

REMARKS

Favorable reconsideration of this application in view of the following discussion is respectfully requested. Claims 13-32 are pending.

In the outstanding Office Action, Claims 13-18 and 22-24 were rejected under 35 U.S.C. § 103(a) as being obvious over Dubé in view of Kojima. Applicant respectfully traverses this rejection on the grounds that independent Claims 13 and 14 each define an invention, which when considered as a whole, is neither anticipated by nor obvious over the applied references.

Applicants noted in the amendment filed July 17, 2003, that an important feature of the present invention is the use of a diffusive reflector. The light flux submitted by each pumping light source around an amplifying medium is distributed by the reflector. Specification, page 8, ll. 10-13. The diffusive reflector advantageously illuminates the amplifying medium in all directions, which promotes homogeneous optical pumping. Specification, page 8, ll. 10-26. As a result, there are less symmetry constraints with respect to the positioning and sorting of the light sources, and additionally, the shape of the reflector can take various configurations. Specification, page 8, ll. 17-26.

The Dubé reference discloses a laser pump cavity in which the light stemming from a light source 91 undergoes several reflections on a wall 44 surrounding the amplifying medium 15. As a result, the light goes through the amplifying medium several times as it is pumped. The Dubé reference explicitly recites that the outer cylindrical surfaces 34 and 44 of the transparent pump cavity sleeves 31 and 41 or the inner surfaces 53 and 63 of the metallic sleeves 51 and 61 are made *specular and/or highly reflective* to the pump light to define the reflective surface of the pump cavity. Dubé, col. 8, ll. 39-44. Claims 13 and 14, on the other hand, each define a diffusive reflector. A diffusive reflector is not specular and is not highly

reflective. Accordingly, Dubé is not believed to anticipate or make obvious the invention of Claim 13 or Claim 14.

The outstanding Office Action admits that Dubé does not disclose a diffusive reflector but relies upon the Kojima reference as disclosing this feature and alleges that it would be obvious to modify Dubé in view of Kojima. Under no circumstances would it be obvious to modify Dubé in view of Kojima.

In order to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one having ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Lastly, the prior art references must teach or suggest all of the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Generally speaking, laser reflectors come in one of two types: specular reflection and diffusive reflection. With specular reflection, generally, the reflector has an elaborate, asymmetric shape, and light from the pump source is prevented from directly reaching the laser medium. With diffusive reflectors, generally, the reflector has a simple shape and is symmetric. In the prior art, the use of specular reflection (e.g., Dubé) is mutually exclusive with diffusive reflection (e.g., Kojima). Without the benefit of Applicant's disclosure, there is no motivation for modifying Dubé, which discloses a system which incorporates a specular laser reflector, to include a diffusive reflector, such as the one disclosed in Kojima.

More particularly, light from the pump source 91 of Dubé does not directly reach the corresponding laser medium, whereas pumping light from the flash lamps of Kojima are

designed to directly reach the laser medium. With Dubé, the amplifying medium is optically pumped by the sole light reflected by the wall of the reflector – a feature which is not found in Kojima. There is no motivation anywhere in the prior art to provide the device of Dubé with a diffusive reflector, and conversely, there is no motivation anywhere in the prior art to provide the device of Kojima with a specular reflector. The combination of references suggested by the outstanding Office Action is completely untenable and has no basis under the legal standard of obviousness.

Therefore, Applicant submits that Claims 13 and 14 patentably distinguish over the applied references. Since Claims 15-32 depend from Claim 13 or 14, Applicant also submits that Claims 15-32 patentably distinguish over the applied references for at least the same reasons as Claims 13 and 14.

Additionally, claims 26, 27, 30 and 31 recite various types of diffusive materials for the claimed reflector. None of those materials are taught or suggested in the Dubé reference, which expressly teaches away from the use of diffusive materials when it teaches that the outer cylindrical surfaces 34 and 44 of the transparent pump cavity sleeves 31 and 41 or the inner surfaces 53 and 63 of the metallic sleeves 51 and 61 are made *specular and/or highly reflective* to the pump light to define the reflective surface of the pump cavity. Dubé, col. 8, ll. 39-44. Nor does Kojima disclose or suggest the diffusive materials defined by claims 26, 27, 30 and 31. Absent substantial evidence that it would be obvious to substitute the claimed materials for the material used in the applied references, this rejection is improper and should be withdrawn. *See Dickenson v. Zurko*, 527 US 150, 50 USPQ2d 1930 (1999); *In re Gartside*, 203 F.3d 1305 (Fed. Cir 2000). Accordingly, claims 26, 27, 30 and 31 are neither anticipated by nor obvious over the applied references.

Appl. No. 10/031,341

Reply to Office Action of September 23, 2003

In view of the foregoing discussion, no further issues are believed to be outstanding in the present application. Therefore, Applicant respectfully requests that the present application be allowed and be passed to issue.



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Respectfully Submitted,

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A handwritten signature in black ink, appearing to read 'Robert C. Mattson', written over a horizontal line.

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